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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,422	09/18/2003	Hirokazu Takenaka	2271/71084	7448

7590 10/29/2007  
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EXAMINER
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MOTSINGER, SEAN T

ART UNIT	PAPER NUMBER
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2624

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10/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/666,422	Applicant(s) TAKENAKA ET AL.	
	Examiner Sean Motsinger	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2007.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22, 32 and 37-54 is/are pending in the application.  
 4a) Of the above claim(s) 1-22 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 32, 37-54 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 9/19/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Applicants Arguments/Amendments***

1. The amendment to the specification and the claims filed on 8/17/2007 has been entered and made of record.
2. Regarding the objection to the title filed on 8/17/2007, applicants amendment to the title overcomes the objection.
3. Regarding the rejections Under 35 U.S.C. 112 first and second paragraph, applicants amendments to claims 39 and 40 are sufficient to overcome the rejection. However there is a new 112 second paragraph rejection regarding the amendment.
4. Applicant's arguments with respect to the art rejections to claims 32 and 37-45 have been considered but are moot in view of the new ground(s) of rejection.

***Rejections Under 35 U.S.C. 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta in view of Murakami in view of Asada in view of Saito in further view of Kita.

6. Re claim 32 ~~Re claim 32~~ Ohta discloses An image processing method for converting a color signal, being input to an image output apparatus, into a color material signal, the image processing method comprising the steps of: defining a first line (see column 3 lines 35 to 46 and figure 6 and 7 note a line is defined between each vertex on the top surface of figure 6 this includes a first line from white to black); defining one or more second lines (see column 3 lines 35 to 46 note the second lines are lines defined from black to the edges of the hexagon in figure 6); defining one or more third lines (see column 3 lines 35 to 46 and figures 6 and 7 note these lines are the lines connecting points, in-between the border of the hexagon and the white points, to black at the bottom of the space; allocating one or more color material signals (signals corresponding to ink see column 8 line 26) on the first, second, and third lines (column 3 lines 45-48 note the output on the lattice points of the lines are known and used to find values in the middle); and obtaining a color material signal (signal corresponding to ink) situated between any of the first, second, and third lines by interpolation(column 3 line 46) according to the first, second, and third lines (column 3 lines 45-48 note the output on the lattice points of the lines are known and used interpolate to find values in the middle);wherein the first line is an achromatic line (line from black to white see figure 7) in a reproducible color range of the image output apparatus (column 8 lines 25-30 note the vertexes have defined outputs so they are within the reproducible color range), wherein the one or more second lines are one or more lines situated on an outermost boundary

(see figure 6 note that the second lines as indicated in the rejection for claim 33 exist on the outermost boundary) line of the reproducible color range, wherein except for the achromatic line, the one or more third lines are one or more lines situated within the reproducible color range of the image output apparatus(column 8 lines 25-30 note the vertexes have defined outputs so they are within the reproducible color range); wherein the first line is a line extending between white and black(see column 3 lines 35 to 46 and figure 6 and 7 note a line is defined between each vertex on the top surface of figure 6 this includes a first line from white to black), wherein the one or more second lines are one or more lines extending between black and a primary color and/or a secondary color(see figure 6 note the lines extend between black and primary or secondary colors), wherein the first line is a line extending between white and black (see figure 7), wherein the one or more second lines are one or more lines extending between black and a primary color and/or a secondary colors (see figure 6 note the lines extend between black and primary or secondary colors) wherein the one or more third lines are one or more lines connecting black with one or more points situated between white and a primary color or a secondary color (see figure 7 note the third lines as indicated in the rejection of claim 33 are between white and the primary and secondary colors); wherein the amount of black is determined according to distance from black (note the property that the amount of black depends from a distance from black is clearly suggested by the reference as a whole i.e. if the color is closer to black you will certainly tend to use more black ink).

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7. Ohta does not disclose wherein the one or more third lines are one or more lines passing through a color range for memory color. Murakami discloses wherein further dividing (column 4 line 64) a color range for memory color (flesh tones column 4 line 62). The motivation is to "reduce the occurrence of errors when color correcting color requiring highly accurate color correction" (column 2 lines 15-16). Therefore it would be obvious to combine Murakami and Ohta to add in more "third lines" further dividing the memory color regions to reach the aforementioned advantage.
8. Murakami further discloses wherein the memory color includes human skin color, (flesh tone column 12 line 27) sky blue color (column 12 line 27), Murakami and Ohta do not disclose ocean blue color and plant green color. However these well known memory colors are disclosed in Asada ocean blue color (sea column 1 lines 26-27) and (plant green color column 1 lines 26-27) The motivation to combine is in Murakami to "reduce the occurrence of errors when color correcting color requiring highly accurate color correction" (column 2 lines 15-16).
9. Ohta and Murakami do not disclose wherein a black starting point for the third line starts later compared to black starting points for other lines however this feature is taught by a combination of Saito and Kita. Saito discloses a black starting point ( ink dying point paragraph 56 ) each line has its own black starting point (see paragraph 57) this means that some lines can have black starting points which start later compared to black starting points for other lines. The purpose is to individually suppress graininess for each line corresponding to a hue (see paragraph 59). However it does not specifically indicate which hues should have the later black

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starting points to optimize UCR or BG. However in view of Kita (column 6 1-10) one of ordinary skill in the art would clearly be aware that the most troubling signals are memory colors and reproduction of these hue should use less black (i.e. have later black starting points. The motivation to combine is to reduce graininess found in both Saito (paragraph 59 and Kita column 6 lines 1-10) Therefore there one of ordinary skill in the art would be motivated to combine Ohta Murakami Asada, Saito and Kita to reach the aforementioned advantages.

10. Re claim 37, Ohta further discloses wherein the one or more color material signals allocated on the first, second, and third lines are one or more signals of same color having different density (figure 7 and column 7 line 24 note the lines are described as "brightness components" which means color does not vary (i.e. the are the same color) and only density (brightness/amount of ink pigment column 8 lines 25-35 ) varies).
11. Re claim 38 Ohta further discloses wherein the one or more color material signals (channels column 8 line 25) allocated on the first, second, and third lines are one or more signals of black (column 8 line 27).
12. Re claim 39 Ohta further discloses wherein the one or more color material signals of black are utilized on the one or more third lines (column 8 lines 25-35 note color material signals are defined along the line by defining at vertexes) to allow

determination of an amount of black for a input signal situated between the first line and the one or more third lines (note this limitation is not positively recited however that the amount of black can be found between the between the lines via interpolation column 7 lines 5-10.

13. Re claim 40 Ohta further discloses wherein the one or more color material signals of black are allocated on the one or more second lines (column 8 lines 25-35 note color material signals are defined along the line by defining at vertexes) to obtain a maximum range for the reproducible color range (note this element is intended use not positively recited in the claim, however from column 8 line 33 it is clear the maximum reproducibility is intended).
14. Re claim 41 Saito discloses, wherein the one or more color-material signals of black are allocated to be black starting points (ink dyeing point paragraph 56) at which graininess is unnoticeable (paragraph 59, note graininess is suppressed).
15. Re claim 42 Saito further discloses wherein color material signals are allocated according to a user (see paragraph 77 note ink dying points can be instructed by the user.)
16. Re claim 43 Murakami discloses further dividing (column 4 line 64) a color range according to a characteristic of an input image (required output accuracy column 12



line 29). The motivation is to "reduce the occurrence of errors when color correcting color requiring highly accurate color correction" (column 2 lines 15-16). Therefore it would be obvious to combine Murakami and Ohta to add in more "third lines" according to accuracy required to reach the aforementioned advantage.

17. Re claim 44 Ohta further discloses further comprising a step of creating a table (LUT column 8 lines 25-30) indicative of the obtained color material signal (output) corresponding to the input color signal .
18. Re claim 45 Ohta further discloses a CPU, wherein the CPU ( column 8 line 53)converts an input color signal into a color material signal by referring to the table (LUT column line 56) as set forth in claim 44.
19. Claims 46-51 and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, in view Saito et al. in further view of Kita et al.
20. Re claim 46 Ohta discloses An image processing method for converting a color signal, being input to an image output apparatus, into a color material signal, the image processing method comprising the steps of: defining a first line (see column 3 lines 35 to 46 and figure 6 and 7 note a line is defined between each vertex on the top surface of figure 6 this includes a first line from white to black); defining one or

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more second lines (see column 3 lines 35 to 46 note the second lines are lines defined from black to the edges of the hexagon in figure 6); defining one or more third lines (see column 3 lines 35 to 46 and figures 6 and 7 note these lines are the lines connecting points, in-between the border of the hexagon and the white points, to black at the bottom of the space; allocating one or more color material signals (signals corresponding to ink see column 8 line 26) on the first, second, and third lines (column 3 lines 45-48 note the output on the lattice points of the lines are known and used to find values in the middle); and obtaining a color material signal (signal corresponding to ink) situated between any of the first, second, and third lines by interpolation(column 3 line 46) according to the first, second, and third lines (column 3 lines 45-48 note the output on the lattice points of the lines are known and used interpolate to find values in the middle) wherein the first line is a line extending between white and black (see figure 7), wherein the one or more second lines are one or more lines extending between black and a primary color and/or a secondary colors (see figure 6 note the lines extend between black and primary or secondary colors) wherein the one or more third lines are one or more lines connecting black with one or more points situated between white and a primary color or a secondary color (see figure 7 note the third lines as indicated in the rejection of claim 33 are between white and the primary and secondary colors); wherein the amount of black is determined according to distance from black (note the property that the amount of black depends from a distance from black is clearly suggested by the reference as a whole i.e. if the color is closer to black you will certainly tend to use more black ink).

21. Ohta does disclose wherein a black starting point for the third line starts later compared to black starting points for other lines however this feature is taught by a combination of Saito and Kita. Saito discloses a black starting point ( ink dying point paragraph 56 ) each line has its own black starting point (see paragraph 57) this means that some lines can have black starting points which start later compared to black starting points for other lines. The purpose is to individually suppress graininess for each line corresponding to a hue (see paragraph 59). However it does not specifically indicate which hues should have the later black starting points to optimize UCR or BG. However in view of Kita (column 6 1-10) one of ordinary skill in the art would clearly be aware that the most troubling signals are memory colors and reproduction of these hue should use less black (i.e. have later black starting points. The motivation to combine is to reduce graininess found in both Saito (paragraph 59 and Kita column 6 lines 1-10) Therefore there one of ordinary skill in the art would be motivated to combine Ohta, Saito and Kita to reach the aforementioned advantages.
22. Re claim 47 Saito discloses, wherein the one or more color-material signals of black are allocated to be black starting points (ink dyeing point paragraph 56) at which graininess is unnoticeable (paragraph 59, note graininess is suppressed).

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23. Re claim 48 Ohta further discloses wherein the one or more color material signals (channels column 8 line 25) allocated on the first, second, and third lines are one or more signals of black (column 8 line 27).
24. Re claim 49 Ohta further discloses wherein the one or more color material signals of black are utilized on the one or more third lines (column 8 lines 25-35 note color material signals are defined along the line by defining at vertexes) to allow determination of an amount of black for a input signal situated between the first line and the one or more third lines (note this limitation is not positively recited however that the amount of black can be found between the between the lines via interpolation column 7 lines 5-10).
25. Re claim 50 Ohta further discloses wherein the one or more color material signals of black are allocated on the one or more second lines (column 8 lines 25-35 note color material signals are defined along the line by defining at vertexes) to obtain a maximum range for the reproducible color range (note this element is intended use not positively recited in the claim, however from column 8 line 33 it is clear the maximum reproducibility is intended).
26. Re claim 51 Saito further discloses wherein color material signals are allocated according to a user (see paragraph 77 note ink dying points can be instructed by the user.)

27. Re claim 53 Ohta further discloses further comprising a step of creating a table (LUT column 8 lines 25-30) indicative of the obtained color material signal (output) corresponding to the input color signal .
28. Re claim 54 Ohta further discloses a CPU, wherein the CPU ( column 8 line 53)converts an input color signal into a color material signal by referring to the table (LUT column line 56) as set forth in claim 44.
29. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, in view Saito et al. and Kita et al in further view of Murakami et al.
30. Re claim 52 Murakami discloses further dividing (column 4 line 64) a color range according to a characteristic of an input image (required output accuracy column 12 line 29). The motivation is to "reduce the occurrence of errors when color correcting color requiring highly accurate color correction" (column 2 lines 15-16). Therefore it would be obvious to combine Murakami and Ohta to add in more "third lines" according to accuracy required to reach the aforementioned advantage. Therefore it would have been obvious at the time of the invention to combine Ohta Saito Kita and Murakami.

### Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Motsinger whose telephone number is 571-270-1237. The examiner can normally be reached on 9-5 M-F.

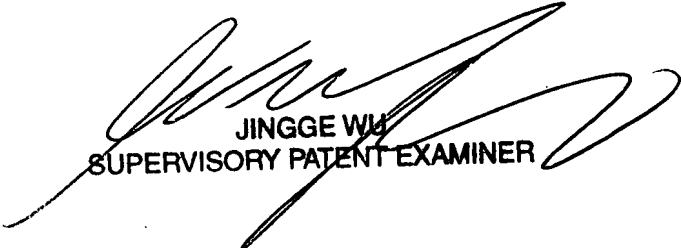
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Motsinger

10/24/2007



JINGGE WU  
SUPERVISORY PATENT EXAMINER